Science GE DOK Alignment Chart **INQUIRY** **Grades 7-8** **GE 1-2**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Enduring Knowledge (Scientific Questioning): Students raise scientifically oriented questions that can be answered through observations, experimentation and/or research. At early stages, students learn how to develop investigable questions that guide their work. At later stages, students connect their questions to scientific ideas, concepts, and quantitative relationships that inform investigations.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 2**	**S 7-8:1** **(DOK 2)** **Students demonstrate their understanding of SCIENTIFIC QUESTIONING by…** • Developing questions that reflect prior knowledge. **AND** • Refining and focusing broad ill-defined questions.	
Enduring Knowledge: (Predicting and Hypothesizing): Scientists' explanations about what happens in the world come partly from what they observe and partly from what they think. Preliminary explanations are constructed with conceptual knowledge and propose a new level of understanding. At early stages, students think about what may happen during an investigation and justify their thinking. At later stages, students identify cause and effect relationships within an hypothesis and base predictions on factual evidence more than opinion.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 2**	**S 7-8: 2** **(DOK 2)** **Students demonstrate their understanding of PREDICTING AND HYPOTHESIZING by…** • Predicting results (evidence) that support the hypothesis. .**AND** • Proposing a hypothesis based upon a scientific concept or principle, observation, or experience that identifies the relationship among variables.	

Science GE DOK Alignment Chart **INQUIRY** **Grades 7-8** **GE 3**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Enduring Knowledge (Designing Experiments): Students design investigations that control variables, generate adequate data/observations to provide reasonable explanations, and can be reproduced by other scientists. At early stages, experimental design reflects what the experimenter will do to answer a question and ensure that a test is fair. At later stages, students design investigations that will produce the appropriate kinds of evidence to support or refute an hypothesis. Multiple trials or the collection of multiple data points are incorporated into the design and variables are controlled to ensure that the investigation is valid and reproducible.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 3**	**S7-8:3** **(DOK 3)** **Students demonstrate their understanding of EXPERIMENTAL DESIGN by…** • Writing a plan related to the question and prediction that includes: a. A diagram labeled using scientific terminology that supports procedures and illustrates the setup . b. A procedure that lists significant steps that identify manipulated (independent) and responding (dependent) variables. c. A **control** for comparing data when appropriate. d. Identification of tools and procedures for collecting data and reducing error.	

Science GE DOK Alignment Chart **INQUIRY** **Grades 7-8** **GE 4-5**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Enduring Knowledge (Conducting Experiments): Students follow an experimental design and use scientific tools (including measurement tools) appropriately and accurately. At early stages, students are encouraged to pay close attention to their experimental plan and record data throughout an investigation. At later stages, students engage in extende d investigations and use more sophisticated science tools including computers.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 2** **DOK 2**	**S7-8:4** **(DOK 2)** **Students demonstrate their ability to CONDUCT EXPERIMENTS by…** • Accurately quantifying observations using **appropriate measurement tools**. **AND** • Using technology to collect, quantify, organize, and store observations (e.g., use of probe). **AND** • Drawing scientifically: a. Recording **multiple perspectives** to scale (e.g., magnification, cross section, top view, side view, etc.).	
Enduring Knowledge (Representing Data and Analysis): Students represent data using text, charts, tables, graphs.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 2** **DOK 2** **DOK 2**	**S57-8:5** **(DOK 2)** **Students demonstrate their ability to REPRESENT DATA by…** • Representing **independent variable** on the "X" axis and **dependent variable** on the "Y" axis. **AND** • Determining a scale for a diagram that is appropriate to the task. **AND** • Using technology to enhance a representation. **AND** • Using color, texture, symbols and other graphic strategies to clarify trends/patterns within a representation.	

Science GE DOK Alignment Chart **INQUIRY** **Grades 7-8** **GE 6-7**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Representing Data and Analysis (continued)		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 3**	**S 7-8: 6** **(DOK 3)** **Students demonstrate their ability to ANALYZE DATA by…** • Identifying, considering and addressing **experimental errors** (e.g., errors in experimental design, errors in data collection procedures). **AND** • Identifying limitations and/or sources of error within the experimental design.	
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 3** **DOK 3** **DOK 3** **DOK 2** **DOK 2**	**S7-8:7** **(DOK 3)** **Students demonstrate their ability to EXPLAIN DATA by…** • Using scientific concepts, models, and terminology to report results, discuss relationships, and propose new explanations. **AND** • Generating **alternative explanations**. **AND** • Documenting and explaining changes in experimental design. **AND** • Sharing conclusion/summary with appropriate audience beyond the research group. **AND** • Using **mathematical analysis** as an integral component of the conclusion.	

Science GE DOK Alignment Chart **INQUIRY** **Grades 7-8** **GE 8**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Enduring Knowledge (Applying Results): Students synthesize the results of an investigation by generating new questions related to the results of the investigation, stating a general rule regarding the understandings learned from the investigation, or applying the understandings learned to similar situations. At early stages, students make connections between classroom investigations and similar situations or experiences. At later stages, students recognize that different explanations can sometimes arise from the same evidence. Students demonstrate an ability to resist overgeneralization based on insufficient evidence and suggest the types of evidence that need to be gathered in order to better understand the focus of the investigation		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 3** **DOK 3** **DOK 3**	**S7-8:8** **(DOK 3)** **Students demonstrate their ability to APPLY RESULTS by…** • Identifying additional data that would strengthen an investigation. **AND** • Explaining limitations for generalizing findings. **AND** • Explaining **relevance of findings** (e.g., So what?) to the local environment (community, school, classroom). **AND** • Devising **recommendations for further investigation** and making **decisions based on evidence** for experimental results.	